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Charlotte Mason's House of Education,
Scale How, Ambleside, UK, 2009

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elocution lesson from Miss Barnett, philosophy from Miss Williams, and special sergeant's drill. Miss Sumner gave a delightful lesson on brush-drawing, chiefly dwelling upon the best way of using *Pour dessiner simplement*, the book set in the programme for Class II. On the Saturday, Miss Williams gave a most interesting lesson on Analytical Geometry, illustrated by diagrams on the blackboard.

The afternoons were mostly left free for excursions, but on the Tuesday we spent a very enjoyable afternoon at Mrs. Firth's. After enjoying the beauties of the garden and Stock Ghyll, we all assembled in the St. George's room, and an Oxford friend of Mrs. Firth's gave us a perfectly delightful lecture on Jane Austen.

On the Friday afternoon, Miss Williams kindly took some of the students for a Geography Walk up Loughrigg.

On the Saturday, Miss Mason invited us all to an "At Home," at Scale How. An interesting paper on Purcell was read by Miss Good, one of the present students, and the different points were illustrated by a delightful programme of Purcell's compositions, performed with the greatest success by the students.

The evenings were spent in jollities of various kinds, notably—a fancy dress dance, scenes from "A Midsummer Night's Dream," and a variety entertainment.

Nothing could have been a more fitting close to the Conference than the "Scale How Sunday." Miss Mason very kindly invited us all up to the house for the whole day, and the drawing-room with its rich store of books was put at our disposal. At the usual time, we all assembled there for meditations, and Miss Mason spoke to us of the Collect and Anthem for Easter Sunday, in her own beautiful way. When the time came to say good-bye, Miss Mason gave to each student a printed explanation of the meaning of the "Three-fold Cord" of the House of Education, *i.e.*, the Badge, the Creed, and the Certificate—an explanation which will be treasured by all. With the Sunday the Conference came to an end, much to the regret of everyone, but I think it was felt by all that its *effects* will be long and lasting, inspiring us with renewed zeal and energy in the carrying out of our sacred work.

THE BRAIN IN RELATION TO EDUCATION.

BY A. WILSON, ESQ., M.D.

(*Continued from page* 329.)

THE *Development* of the brain is closely interwoven with the question of education. The brain at birth is so undeveloped that it is questionable if a newly-born infant can see. This may come as a shock to those who fancy their children recognise them at birth, for at this stage there is little consciousness of feeling. The brain cells are all laid down in layers at birth, but are quite undeveloped, and therefore can perform no duties; they gradually come into activity as the fibres become ensheathed. Thus the fibres running from the skin to the sensory cells first become insulated. These in turn stimulate the motor cells and the motor fibres then are ensheathed.

Similarly with sight and hearing. The fibres carrying impressions from the outer world are first insulated. Thus the brain cells are roused to activity by light and sound, and finally the fibres leading from one centre (association centre) to another are insulated; so that higher mental action can be performed. It is found by experiment that if one eye of a kitten be kept from the influence of light that optic nerve is delayed accordingly in its development. This shows the stimulating effect of light necessary for bringing the nerve to activity. While sensation, motion, sight and other functions are "laid on," if I may use an electrical term, in the early weeks of life, the higher mental or association centres are only connected up in childhood and may go on developing up to 30, or even later. So there is always hope for mental improvement during the first half of life. After 50, there comes to be a pause or even a shrinking in some cases of the brain.

The *Weight* of the brain shows many variations and demonstrates the fact that brain weight and intelligence are not necessarily connected. The average weight of a man's brain is 48 ozs. or 3 lbs., while a woman's brain is ¼ lb. less, 44 ozs. The brain is heaviest about 30, but it is astonishing how heavy in proportion is a child's brain, and there is comparatively little increase in weight after the tenth year. The lowest brain weight recorded is about 8 ozs., while the heaviest recorded is about 70 ozs., in both cases the property of idiots. Many of the heaviest brains are owned by idiots and other insane people. Often idiots have brains which weigh over 4 lbs. Comparing the brain weights of the insane it is found that they keep almost to the average, for the wasted brains of old people and dements are more than balanced by the excessive weights of the brains of epileptics and others. It is sometimes found that those of great intellect excel in development in one area and are deficient in others. Thus Gambetta had an unusual development in the speech area, but deficient in other parts, so that the actual brain was lighter than the average. Therefore an intellectual man, as a scientist, or lawyer, or musician, may be well developed in certain parts, but yet show less brain weight than a prize-fighter or a navvy. This excessive development of one faculty is the foundation of *Genius*. Other faculties may be deficient, thus explaining the eccentricities of geniuses. There is one cheering prospect for us in the midst of our toil, that hard work improves brain tissue. It is worry that kills. A worrying nature, like a high-stepping horse, soon knocks itself to pieces.

It is evident, then, that all who have to educate children should begin in infancy to store a child's brain with useful information and wholesome ideas. One knows that every infant is full of activity, seeking to fill its mind, the receptive side of the brain being an empty storehouse. Would that parents could realize the importance of carefully satisfying the endless enquiries their children make! It is weary work often enough, but the parent must lay aside self and devote himself or herself wholly to the offspring. This a modern idea and opposed to the ancient doctrine that children must be seen and not heard. It is a wonder many of us were not stupid, considering the way parents of former years looked upon their children. Certainly many of us owe our tempers, and shortcomings, to an ignorant lack of interest in our earliest education. It is the best investment we can make to bring up our children in happiness, and to satisfy their intelligence, and not merely to satisfy it, but to stimulate and

develop it. It is an investment in which the mother reaps equally with the father, and which brings more comfort and happiness in old age than the biggest annuity that Mammon can offer. It may not be convenient to answer a child's questions at one particular time, but that is no reason for a rebuff, which not only deprives it of intellectual food, but tends to develop an irritable and sulky disposition. But as much as possible, every attention should be given to instruct the youngest child, training it always to accuracy of observation and inference. It is of the highest importance always to deal truthfully and fairly with a child. As youth approaches we will be rewarded with a fine intelligence which will be the pride of our hearts, and in manhood or womanhood our admiration will increase. Our reward will be great in proportion to the pains we take in infancy and the honesty of our dealings. Not only so, we will have the satisfaction of seeing a healthy mind. We will watch the youth stedfast and firm against the many temptations of the world, speeding forward with higher motives and stretching up to loftier ambitions. Is this not indeed more than gold and silver can give? And what is there more to be admired than a maiden endowed with intelligence, while superadded is the higher moral training as evinced by her modesty and simplicity, combined with grace and kindliness? How opposite are so many of the young women of the day, uneducated, vain, fond of show and yet lacking in the nobler qualities and instincts of womanhood.

I sometimes think that the false lives so many lead is due to faulty education. Irritable parents, labouring under strain, are very often deficient in the virtue of patience. They cannot endure the ceaseless prattle, the perpetual motion, and endless enquiries, of the young bairns around them. The children are a positive nuisance. There is not only an actual lack of sympathy between parent and child, but at times a positive hatred. This is by no means uncommon, though almost incredible; and while the public have recently been shocked, both at the mock punishment, and also at the fiendish cruelty of a lady to her child, such a case is only a slight accentuation and example of a terrible sore which afflicts our nation in its days of prosperity, luxury, and engendered selfishness.

I do not mean that in our parish we would find many mothers putting wasps and nettles down her child's back, but I fear we would find not a few mothers who would sooner let the nurse take charge of the sick child, rather than fatigue herself in administering to its comforts. Yet what could give the suffering one more joy and hope than to nestle on its mother's arm. And how many fathers would sooner go to the theatre, or the club, rather than give their evenings up wholly to amuse and instruct their children! These acts of neglect are forms of passive cruelty, that widen the gulf 'twixt parent and child. This may seem a matter of but little importance, quite outside the sphere of education, but the whole basis of sound healthy moral education is by the influence of the parent, and the bond of that influence is affection and sympathy. It is important that everyone should understand the mechanical principles of education. One can truly say the brain is a machine. The motor force is living energy, and life is the highest force, unmakeable and uncomprehensible. Once it ceases it cannot be revived.

We have studied the areas of the brain, and seen that groups of cells perform certain duties and no other; also that these groups are connected by fibres, which carry messages and impulses to and fro. We have also seen that man's highest intellect is sight. Man is not dependent on smell in his higher communities, so that part of the brain is poorly developed. The lower savages do depend on their scent for their existence, tracking animals for food. Some tribes of Indians can smell objects many miles off. The dog lives by scent, and its organ of smell is highly developed in the brain.

If a child be born blind, or become so soon after birth, that part of the brain which receives sight impressions is almost absent. Moreover, in such afflicted conditions you find ideation very stunted. It is difficult to make them understand what colour and substance are. Even under favourable teaching their physical blindness leads to a mental blank. This is also evinced in their listless apathetic faces, often with a resigned expression, patiently waiting till their darkness ends; possibly, we may hope, to be followed by a compensation in the life to follow. Let us then make the most of the brain centre of vision in the early days of our children, for this organ may be compared to a photographic apparatus; and the more good photographs they can stow away in childhood, the better they will be equipped for the battle of life. The eye is the camera, and the most perfect one ever made. There is a lens and iris diaphragm, with a muscle of accommodation for accurate and rapid focussing. The retina at the back of the eye is the screen. The retina is a very wonderful mechanism of nerve fibres and cells, and is an outgrowth from the brain, therefore it is in reality a part of the brain. In the early state of development the brain consists of a hollow tube. It then enlarges, and becomes constricted at parts to form lobes. From one of these lobes projects a little cup on a stalk. This cup forms the retina, while the stalk becomes the optic nerve. Therefore, while we can only liken the retina to the screen, we may say that the group of brain cells at the end of the optic nerve is the sensitized plate. It would be more accurate to put it in the plural sense, for the organ of sight may be compared to an album of photographs, numbering not millions but billions and trillions multiplied. We are quite certain that a limited area photographs words, so we may equally infer another part photographs colour and another part form, and so on with many sub-divisions. Our object should be to fill our storehouse and the storehouses of those depending on us. Above all, let us be careful as to the quality of our photographic album and store it carefully only with the best. The photographer has always to be careful as to his exposure, and he destroys all his under-exposed photographs as worthless. In education, I fear, many of the photographs are worthless from under-exposure. In brain photographs we have several ways of recording the same object, but this does not minimise the importance of time-exposure. Supposing we take a child of five and show it an orange for a few minutes, and it never sees another orange for twenty years, what sort of an idea or impression would it have? Of course its memory would be very shady. But if we daily give the child oranges, its brain gradually records impressions that will not fade. First there is the form or shape, next the colour, thirdly the appearance of the pulp and pips inside. Leaving the organ of sight, the child's brain records other impressions. First of touch, the feel of the rind, the moisture of the juice inside. The organ of smell also records the scent of the oil or its fragrance; while, not least, the organ of taste receives an agreeably and lasting impression. The following winter the sight of the fruit in the shop windows revives all the same old impressions, and this is the faculty of Memory. *Memory* is the revival of former mental impressions: the living over again of former states. There is a seeing over again of past mental pictures. But there must be something to call forth memory. In this case the sight of the fruit recalls by memory the taste and smell and touch which had been recorded the previous year.

Among other recording centres there are the four speech centres requiring notice.

First, the word-hearing centre, for the child associates the word orange with the fruit.

Secondly, the word-pronouncing or speaking centre, which is in touch with the former, and has to be appealed to when the child wishes to ask for an orange.

Thirdly, the word-seeing or reading centre, when the child is old enough to spell and read the word orange.

Fourthly, the motor centre connected with the hand, being the writing centre, when the child can put on paper the word orange.

Let us briefly enumerate the number of records the brain makes of the orange, and the order in which these centres record. 1st, Sight centre: colour, form, texture, other details. 2nd, Touch centre: the roughness and shape, so as to recognise it by either in the dark. 3rd, Smell centre. 4th, Taste centre. 5th, Word centre: (*a*) word-hearing, (*b*) word-speaking, (*c*) word-seeing, (*d*) word-writing.

As before stated memory requires a stimulus. It cannot be spontaneous. In fact it is doubtful if there be spontaneous thought or ideas. Every thought is in response to a stimulus or to a previous idea or thought. We can only stimulate by the arousing of one centre. Thus, if we say the word orange, or read it, or hear it said, the word centre calls forth ideation in all the other centres. If we unexpectedly in the dark felt an orange, we would only know what it was by rousing the other centres, or some of them. While I am talking, I call forth with everyone present memories of the orange. To demonstrate this more thoroughly, let me speak of the

acidity of sour gooseberries, and you will feel your teeth on edge. This is but the rousing of memories in your taste centres, and also sensory dental nerves. It is the reviving of former impressions. If I said this before anyone who had never seen a gooseberry, the words would have no meaning, as there would be no past impressions to work upon. If I suggest the scraping of a slate pencil, we all feel the teeth on edge. This is the rousing of past impressions through the auditory centre. If I say "St. Paul's Cathedral," the hearing centre calls forth a brain picture or photograph with those who know the building. This illustrates the stimulus necessary for memory. But the past impression of St. Paul's Cathedral must be there. In some cases the word is a blank, as there is no mental picture to revive.

If we carry this matter of education further, the same principles hold good up to the very highest point. Thus, in teaching music, the child first sees the printed music, then records the names of the notes A to G, sharps and flats; thirdly, it sees the keyboard and associates the one with the other; fourthly, the hand centre is trained to the manipulation, and finally the hearing centre. At first it is slow and tedious; such a note is A on the paper, and the eye carefully searches the keyboard, and after sundry errors strikes the right key. Until the ear is educated the pupil must depend on the teacher for help and correction. But once the ear is trained the pupil knows by sound when an error is committed and can afford to relieve the eye from searching the keyboard, while the manipulation exercises train the fingers, so as to adapt themselves to the correct distances between the respective notes. It becomes a laborious training, but once accomplished the eye no longer watches the keyboard, but the music, trusting to the hand to measure off the distance between the notes and also to the ear to correct any false notes. One sees great players performing with lightning rapidity and then the action has become automatic. The early process of reading each note and carefully observing the key has been superseded through practice. The skilled musician reads the music at a glance, he never pauses to direct his hands. His hands obey the movements almost magically as the sight centre of the brain transmits its messages to the motor cells of the fingers. This becomes an automatic action, calling forth no thought, and is shown by the frequency with which musicians can perform and yet engage in conversation, showing that their forebrains, or centres of attention, are otherwise occupied. Some call this phenomenon sub-consciousness or the unconsciousness of mind, but however it is labelled, it is a purely automatic skilled mechanism. We see it in the smaller details of life. A man reads a paper while crossing a crowded thoroughfare. His forebrain is in full attention on the newspaper. He takes no heed of the traffic. But his sub-consciousness guides him. That is, his sight centre and ear centre announce the approach of a vehicle, and without telegraphing to the forebrain for directions, wire on to the walking centre on which side to move. This shows that a large amount of information and knowledge is acquired by the brain, and stored up there to be used in a quiet fashion, without always rousing the full intellectual activities. One can see what a saving of brain work there must be if the brain can act automatically, or sub-consciously, without calling on the forebrain for its aid. The converse is evident when we have either deep study or important intellectual work to perform. After a time there is prostration, for the whole brain has been at work, not only the Receptive centres of sight and hearing, but also the higher intellectual centres, the Prefrontal. If there be too great a strain on the mind or brain from a continued effort, as in a long investigation of science, or a lawsuit, or too much study, then the whole brain is exhausted, and the individual becomes for the time weak-brained, or neurasthenic, to use a new-fangled term. The cure now is rest, for the brain has wonderful recuperative power. If the cure be not sought, then worse may follow, even to insanity; or there may be a general impairment in will-power or alteration in character.

It is extremely important for adults not to be overstrained, but it is of still greater importance that the young should not suffer in this way. One often meets with backward children, who are listless and inattentive, and fail to respond to their teachers. They want to play. Then let them play. Take them from school and give them plenty of out-door games, and plain wholesome food, avoiding meat as being too stimulating. Strengthen their bodies and let their brains lie fallow. In time their brains will be ready for action. Some

children learn to read at six or seven, others at four or five. In these days of strain, I would sooner have the late readers than use pressure to those of tender years. We too often see children, who are exceedingly clever and precocious at four, lagging far behind their companions at fourteen.

It is a great mistake to force intelligent young children. Their powers of reception are great, but their powers of recuperation are necessarily small. If the latter are overdrawn, it saps their intellectual growth, not for the time only but for life. It is therefore a good thing to graduate the education, according to the age or period of life. Short hours of study, and plenty of exercise to develop the muscles. Kindergarten schemes do well at the beginning, imparting a lot of general information on most subjects. The hands are taught in the occupation of modelling and carpentry. Is not this a grand basis for future engineering?

It is often urged that very young children should be taught natural sciences. This I think should be worked on broad lines. You may teach a child of four or five to discriminate between an oak leaf and a primrose, but under the age of eight to ten you will make very little headway with detail or minutiæ. At this age you may certainly lay a useful foundation, while at the younger period you may easily create the desire for knowledge. The child can then appreciate structure of flowers, the formation of buds and leaves, and even use the microscope. It can learn of the moon's journey round the earth, and by diagram or model understand the earth's course round the sun, with reference to day, and night, and the seasons. Knowledge, so imparted in a variety of subjects, such as botany, natural history, astronomy, geology, will create such a thirst, that will stimulate study and desire during the 'teens. This will prove of value almost to the salvation of the soul, for these scientific hobbies will keep the young people steady and wholesome-minded.

Those whose privilege it is to educate the young should aim at a little well done, rather than a large display. Let a few subjects be well taught. Impress on them accuracy of observation and precision in recording. It is no use to scamp knowledge, or it will all be lost. One should learn slowly, and when anything is to be stored in the brain, it should be stamped on as many brain centres as possible.

One sees how figures, mathematics, Euclid problems, and poetry, rapidly fade from memory; so that only some brains are constituted to retain them. These can only be stamped on the four speech centres which have already been described. These are almost the highest intellectual centres, and on that account are apt to be unstable.

It is a matter of rote, or repetition, to fix a problem or even a poem in the mind. In the latter, the sound of one line recalls the next, hence the value of rhyme; whilst in problems, if the memory fails at one point, the thread is broken and all is lost. Geography and history are almost as bad. One has to remember a lot of concrete details, names of towns and rivers, names of kings, and dates, and unless there is an individual aptitude, it all fades as one grows older.

In all these the word-hearing centre is the chief registry office. This is, alas, not a large brain centre, and with many not over-developed. Few could learn the above subjects unless they repeated their lessons aloud several times, stamping the word-hearing centre with impressions. Unless there is some very good stimulus in other brain centres, these records disappear and cannot be recalled. I doubt if one parent in this room, I might almost say in this society, could write down all the Kings and Queens of England, with the dates of their accession. Yet probably all were able to do so in their schooling days. The reason is obvious. The word-hearing centre alone was appealed to. But if we take a few prominent rulers, as Alfred the Great, Elizabeth, Henry VIII., and others, we can give a good deal of information about them, because their acts and lives are stamped on several brain centres. The stories concerning each have made so many brain pictures, or photographs, so that when the name of Elizabeth is mentioned, we recall a brain picture of a handsome woman, a great sportswoman, and several incidents in her life, including her hunting round our forest.

Teachers then can aid their pupils by graphic details, living brain photographs or pictures, being tacked on to any subject in itself concrete and difficult to retain. Thus in geography, map-drawing stamps the contour of a country on the brain; while the products of a country or a town, or some historic event, may easily make permanent mental records.

There is a great art in the interweaving of one subject with another; so that when any particular matter is under consideration, it will appeal to many brain centres and dip into a variety of sources of information.

By way of general *resumé*, from what has been described it will be seen that the brain and nervous system is the governing element of the human body, and a very necessary part also. It has its various types and rudiments in all the lower animals: from the sea anemone upwards, right through the worms, lobsters, snails, fish, reptiles, birds, mammals, up to the monkeys and higher apes. The lowest animals have just enough nervous system to enable them to live, while the higher animals have additional nerve powers, according as their conditions of existence become more perilous. These latter have to hunt for their food, and protect themselves, and provide for their young. Man has more to fulfil than all these, for he has risen to rule the beasts of the field, and been placed in a position of high office.

We can, however, simplify this complex human brain by dividing it according to its functions into three parts. There is the lowest, hindmost brain, which I have not this evening mentioned. It is the vital centre, and called the medulla oblongata. It has no consciousness, but governs all the important functions of the body, such as the breathing centre, the heart, the digestion, and so forth. We might compare it to the housekeeper, or to the steward of a large estate. Perhaps the best simile is the Army Service Corps. It looks after the physical needs of the army and the commissariat. When it fails all is up.

The second division of the brain is the sensori-motor, over which most of our time has been spent. This part of the brain receives impressions from the outer world, and directs all the actions of our lives. It is best likened to the combatant portion of the army, the active part of the service; or it resembles the crew of a ship.

The third portion of the brain is the prefrontal, and the smallest of all in area, yet the most important. This is the master of the house, who directs the servants of the household; or more correctly, the captain of the ship, or the general commanding the army. No soldiers on entering the army, nor sailors joining the navy, are competent. They have to be trained; at first they are clumsy and make mistakes, but in time become skilled and can perform their duties without the superintendence of their superior officers.

Precisely so with the brain. The young developing brain cells and brain centres have to be taught the simplest details, and stumble along during their long period of education. Some sailors are smarter than others and learn quicker, and so it is with our brain cells. Some children are more receptive and responsive than others.

Education, in time, equips these sensori-motor centres, so that they can act without calling forth the higher supervising brain centres. This has been demonstrated in the case of learning music, and therefore need not be repeated. That is to say, that most of our common occupations are performed without fixing our attention on the individual actions. We write without watching the formation of each letter; we sew whilst talking and without watching the needle; we eat without watching the movements of our hands, or accurately apportioning the size of the morsels to be swallowed.

Thus the mid-brain, when well trained, acts without calling on the higher centres. Some call it the unconscious mind, but others use the better term subconscious, as the former opens an endless discussion as to what consciousness is—a metaphysical discussion without limit. To show in detail how our mid-brain takes care of us, take the simple example of how we carry our keys, or those who wear eye-glasses, how much anxiety they are saved. No one specially fixes one's attention on the keys, and yet how rarely are they mislaid. The mid-brain, trained for years to put them in a certain pocket, seldom fails. A drawer is locked, shutting away valuables or secrets; you do not pause and make sure your keys are in the right place, for the mid-brain, well trained, automatically carries out the process, without for a moment arousing your attention. This goes on twenty times a day, year in and year out, without once defaulting. Similarly, those who use glasses often are startled when far from home to miss their spectacles or eye-glasses. After much fumbling they find their trusty servant the mid-brain has, without calling their attention, quietly stowed them away in some special pocket. If we had to call on the higher brain for these minutiæ, we would wear out our lives. I liken this automatic action to the life in the army, where the sentries, like our eyes and ears, report to the officers, and the officers call on the mobile troops to perform certain acts. As long as they can manage they don't disturb their general and his staff. But let a critical or exceptional period arrive, and the general is roused, and his counsel and direction demanded.

So with our mid-brain. It calls on the fore-brain or prefrontal for direction in special circumstances. The mechanical process of answering a letter is managed by the mid-brain in an automatic fashion. But the answering of correspondence, and the composition or drafting of a letter, can only be done by the prefrontal, which has to weigh, analyse, and consider all details. The skill of the prefrontal is interwoven with the intelligence, and the intelligence rests upon its previous education, just as the success of the general rests upon the knowledge, education, and previous experience which he has acquired. The last three years have given us ample examples of both kinds of generals in human warfare. We have their counterparts in mental variations.

In matters of education, in the broadest term, we endeavour to equip the prefrontal of the young with our own knowledge, by way of saving them from some of the bitter lessons of experience. But we all know that many children are wilful and self-opinionated, and this may also apply to adolescents. In such cases we must allow them to pass through some troubles in order to learn wisdom.

Wisdom is indeed the most valuable possession that we can have, and ought to be our aim more than wealth and position. If we can acquire it we may perhaps hand it down to our posterity, and it has not the chance of crumbling away like the latter. The wiser and more intellectual the parent, the better brain will the child inherit. We see the converse especially most marked in the child of the criminal, drunkard, and degenerate.

It is well for us to bear in mind the influence of *Heredity*.

We inherit our virtues and our vices, and we pass them on to our children. This factor ought to keep us in an attitude of sincere humility when dealing with them. But if we are willing frankly to recognize our own faults and weaknesses, we may watch for them in our children, and indeed forestall them. This is better than waiting for their evidence and development, and then administering correction.

Has a child an irritable temper? If so, either father or mother looking back can trace the same type exactly.

Is our child nervous, impatient, or peevish? So were we in our earlier days. But, unfortunately, in the former period the patriarchal government sternly repressed these faults, or more correctly, weaknesses, and I fear soured many.

What, then, must we do with our children? Far be it from me to advocate the absence of punishment where it is a wholesome medicine. But with intelligent children there are better ways of reaching their moral nature. Patience and self-command on the part of the senior or superior is an absolute essential, so also is sympathy. However aggravating the child may be, never show the slightest concern or agitation. This self-control will so surprise the little miscreant that it will effect half the cure of the outburst or explosion of misdirected nerve force. There is no use rubbing a child the wrong way, and arguing when it is fractious. Let the storm subside, and then a quiet talk will do a great deal in toning up the morals, especially if the child is convinced of the parent's earnestness and affection.

The children of the poor are seldom treated this way, nor does there seem much hope for them. The prolific families, always on the edge of starvation, come more to resemble the lower animals, and these types of degeneracy are always on the increase. I fear with them the only method to reach their moral nature is by way of the sensory nerves of the skin. But in this we of the middle class often have opportunities, which we should seize, of helping the children of the poor.

While on the subject of moral education one must refer to *Habits*.

It must be our earnest endeavour to cultivate and encourage good habits, sparing no endeavours to check and suppress bad habits.

What then is habit? Probably it has a physical basis in the brain. Habit may be acquired or inherited.

We see many examples of the inherited habit, both good and bad. We can see and forestall them in our children during the different periods of development.

But acquired habits must be carefully watched. When the individual, or in other words, the mind or brain, has become predominated by a habit, the whole nature is altered. The mind and thinking powers are coloured thereby in the most slavish fashion. Train up one child as a Socialist, and another as a Conservative, and they review the same subject with all sincerity, but from opposite sides, and arrive at opposite conclusions, and you cannot alter their habit of thought.

The same applies in religious and moral matters. The child brought up carelessly, or worse, encouraged in selfish motives, may be shrewd and clever in business, but will become grasping and grinding to the point of cruelty, and even if tempered with religion will be exacting and mean almost to the point of sharp practice. How much better if a child be trained to be generous, kind, and helpful of others. He may not make so much money, but will have more satisfaction in what he makes, and the greater pleasure of feeling he has helped others.

But there is a more serious aspect, and that is that at the decline of life, when will power fails, bad habits once acquired, though held in check for years, may reappear in vigour. Old age then resembles childhood, but from a different cause. In childhood and youth the higher brain faculties are gradually developing, fresh brain cells becoming active. They ought during manhood to remain in a high state of perfection. But in senile decay the first cells to go are the highest developed, and chief among them those that regulate memory, judgment, and will power.

We meet with examples daily of how old age reflects youth. How many old people there are, whom we venerate and respect, and go to for wisdom and example. Theirs has been a well-trained childhood, and a noble youth. On the other hand we meet some whom we despise, who disgrace themselves in old age. Better had these not outlived their faculties, they reflect an unstable and unhealthy childhood.

Thus, in a sense, we are victims to our construction, and as we did not make ourselves, it opens up a wide subject for contemplation on the question of *Responsibility*.

I feel convinced that while many are born with but poor chance in life of being noble and honourable, there are yet many of good heredity and type whom we might say are born into the Kingdom of God.

Finally, I would put in a plea for the children. It is a fact that in the first and earliest form of life there is a germ-plasm of infinitesimal quantity. This resembles the mustard seed we read of, which is the smallest of seeds, but grows to one of the largest of trees. So this germ-plasm is the characteristic feature in our development. It permeates every organ, influencing both body and mind. Thus you see in one family a distinct hand, in another a special type of face or voice, and so on. These are transmitted peculiarities, and the same happens in our mental and I fear also in our spiritual states. Thus the son resembles the father, perhaps following him in a benevolent life, or it may be the reverse, in cunning practices or in evil ways. We can almost foretell the career of the child when we know the parents. How could it be otherwise, for the inherited germ-plasm must make the son like the father? This gives us food for reflection in the question of *Marriage*. One parent may be weak or unstable, or even evil, the other parent may be strong and good. So there is a battle between two germ-plasms. The chances are uncertain as to the result in the children. The stronger characteristics are more likely to be inherited, but much depends on the education and influence during childhood—so there is always hope to stamp out the bad. One parent may be strong in wickedness, and therefore prevail over the opposite inheritance which may be virtuous but weak. Hence the importance of each of us striving to be strong in all that is good.

While we would like to see our children educated to the highest pitch, are we not more anxious to see them grow up good and useful men and women? Are not the refinements of mind and character part of the education to be sought after? Is not the main object of our education to equip us to take a high place in this world's affairs, always working for the elevation and improvement of others? And finally, when we reach the end of our journey and resign our commission, will we not be the better prepared for the Future State, which though unknown, yet we hope and yearn for? Does not education, when used in its highest and noblest sense, stimulate us, and prepare us for that Life in which there is no turmoil, no poverty, no struggling of one man against his neighbour, no bargain hunting; but a peace which is not apathy, a joy which is not excitement, and contentment which is not indifference.

THE FÉSOLE CLUB PAPERS.

BY W. G. COLLINGWOOD.

IV.—THROUGH THE WINDOW.

A MARVELLOUSLY pleasant thing it is, and not unprofitable, to pack your sketch book in one pocket and your paint-box in another, and take ticket, in early summer, to some foreign town for a little street-sketching. The sunshine is at its best, when as yet dust, and heat, and mosquitoes, and tourists have not appeared; only the blaze of light on crumbling walls and striped awnings, the breadth of gloom under heavy eaves and down deep lanes, the purple sheen of slates and roofing-shingles against deep blue and fresh, unsullied green; and at the windows, and along the pavement, such eddying glitter of populous life, lads and men bronzed and bloused, women and children in gay and light attire, all making holiday, you could think (for you know nothing of the dark side of their lives), in honour of midsummer.

The unaccustomedness and movement of travelling, the necessity of making the most of time, are great incitements to effort; there is no doubt that every artist works with a tenfold energy when he is on a sketching-tour. But is it because he has no subjects at home? Often, when I have been standing at a street-corner, paint-box on thumb and sketch-book in hand, and the usual crowd of boys and idlers at my shoulder, I have been amused with their blank astonishment that I should choose a view, to them so utterly uninteresting. "What is it he does?" they say. "It is nothing; the street, the shops, the door of the cathedral. Ah, see the coal-cart; to paint a coal-cart! See there, the flowers at the window: and our Toinette—it is she! Hé! Toinette, one makes thy portrait!" And then comes out the shopkeeper, bland and patronising. "Very well done, sir; courage! But has monsieur seen our new museum? *There's* a fine building! What statues! What a façade! That would make a magnificent subject!" Occasionally, indeed, as the work advances, the artist has the honour of drawing public attention to points of interest unnoticed before; and